

ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE
 DEFENSE ATOMIC SUPPORT AGENCY
 BETHESDA, MARYLAND 20014

Wednesday, 30 November 1966

AGENDA

14th MEETING OF THE BOARD OF GOVERNORS

<u>TIME</u>	<u>SUBJECT</u>	<u>SPEAKER</u>
0845 - 0900	Welcome - Coffee.....	Directorate
0900 - 0910	Meeting Opened.....	Lt. Gen. Donnelly
	Introduction	CAPT Burkle
	Agenda Presentation	
	Luncheon Arrangements	
	Minutes.....	Lt. Col. Mitchell
0910 - 0945	Research Program & Military Requirements	Col. Behrens
0945 - 1100	Research Activities Report.....	Dr. Wyckoff
	a. Bone Marrow Cellularity of Whole-Body Irradiated Fisher Rats.....	Dr. Rene
	b. Selected Post-Irradiation Biochemical Responses of the Rodent.....	Dr. Strike
	(15 Minute Break)	
	c. Dose Rate and Pulse Width in Radiation Biology.....	CDR Levich
	d. The Immediate Casualty Producing Dose.....	Dr. Kaplan
1100 - 1130	DASA Biomedical Budget.....	Dr. Wikner
1130 - 1145	AFFRI Administrative Report.....	Col. Browning
1145 - 1200	Discussion.....	Lt. Gen. Donnelly

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SUBJECT: Minutes of the Fourteenth Meeting, Armed Forces Radiobiology
Research Institute Board of Governors, 30 November 1966

1. Attendees:

Defense Atomic Support Agency

Lt. General Harold C. Donnelly, Director, DASA
Lt. Colonel Hugh B. Mitchell, Chief, Medical Division, DASA
Dr. N. F. Wikner, Deputy Director, Scientific
CDR G. P. Douglas, Medical Division, DASA

Service Representatives

Army

Major General James T. McGibony, Deputy Surgeon General
Lt. Colonel Jack C. Fitzpatrick, Chief, Nuclear Energy Division, OTSG

Navy

RADM L. C. Newman, Assistant Chief for Research and Military
Medical Specialties, Bureau of Medicine and Surgery
RADM G. M. Davis, Commanding Officer, National Naval Medical Center
CAPT J. R. Kingston, Assistant for Basic Research, Research Division,
Bureau of Medicine and Surgery
CAPT H. C. Sudduth, Commanding Officer, Naval Medical Research
Institute, National Naval Medical Center

Air Force

Major General A. A. Towner, Deputy Surgeon General
Brig. General John M. Talbot, Special Assistant for Medical Research
Colonel G. L. Hekhuis, Deputy Director, Plans and Hospitalization, OTSG
Colonel A. F. Meyer, Jr., Chief, Biomedical Sciences Corps, OTSG
Colonel R. S. Malone, Staff Assistant for Medical Research, OTSG
Lt. Colonel Dale R. Lindall, Bionucleonics Officer, OTSG

Atomic Energy Commission

Dr. Charles Dunham, Director, Division of Biology and Medicine

AFRRI

Captain Joseph S. Burkle, Director
Colonel L. E. Browning, Deputy Director, Operations & Administration
Dr. H. O. Wyckoff, Deputy Director, Scientific
Commander S. E. Sykes, Executive Officer
Colonel Donald H. Behrens, Head, Military Analysis Department
Lt. Colonel L. J. Seigneur, Chairman, Radiation Biology Department
Dr. S. J. Kaplan, Chairman, Behavioral Sciences Department
Mr. R. E. Carter, Chairman, Physical Sciences Department
Dr. S. J. Baum, Chairman, Experimental Pathology Department

Mr. S. W. Porter, Head, Radiological Safety Department
Mr. R. A. Moser, Head, Technical Information & Services Department
Mr. B. Maury, Head, Program Coordination Office
LCDR T. O. Jordan, Head, Operations and Administration Department
Dr. Anthony Rene, Experimental Pathology Department
CDR C. Levich, Radiation Biology Department
Dr. Thomas A. Strike, Radiation Biology Department
Mr. L. J. Stefani, Military Analysis Department
LCDR D. L. Roudebush, Military Analysis Department
Mr. Michael F. Canning, Technical Information & Services Department
Mr. F. G. Fagan, Technical Information & Services Department

2. The meeting was called to order by General Donnelly at 0900 hours in the Board Room of the AFRRI. The minutes of the Thirteenth Meeting of the Board of Governors were approved as previously distributed to the members of the Board.

3. Captain Joseph S. Burkle opened the meeting by asking Colonel Donald H. Behrens to present a brief summary of the Relationship of Service Requirements to the AFRRI Research Program. Colonel Behrens conducted a review of the three Services' requirements in the field of radiobiology. The published requirements were broken down into some twenty-two different areas such as: dose rate effects, protective drugs, recovery, etc. A chart was constructed which indicated what areas had been expressed by the individual Services as items requiring an investigative effort. Priorities assigned by each Service were also indicated.

Colonel Behrens next examined the AFRRI research program by carefully studying the individual subtasks. Each subtask was then compared to each of the twenty-two individual areas previously derived. Where a relationship existed, a dot was placed on the above-mentioned chart. The dots did not reflect any quantitative comparison, but did provide a qualitative relationship between the subtasks of the AFRRI research program and the written Service requirements. This made it possible to compare the on-going AFRRI program with the published radiobiological research requirements of the three military Services.

4. Dr. Harold O. Wyckoff introduced the following members from the Scientific Departments:

a. Dr. Anthony Rene, Experimental Pathology Department, discussed the bone marrow cellularity of whole-body irradiated Fischer rats. He explained that a knowledge of radiation effects on cells is fundamental to an understanding of whole-body response. An analysis was made of the depression and subsequent regeneration of the lymphoid cells of animals exposed to sublethal doses of mixed neutron and gamma rays. The results indicate an early depression, an abortive rise and a return to normal 11 to 14 days after exposure, depending on the dose used. Tritium labelled thymidine was used to further characterize the cell population during the regeneration time.

b. Dr. Thomas A. Strike, Radiation Biology Department spoke on selected post-irradiation biochemical responses of the rodent. The "biological indicator" concept of radiation damage as related to physical exposure dose and degree of radiosensitivity was reviewed. Dr. Strike also presented a brief review of the methodology utilized and the progress of two research projects, using biochemical end points as biological indicators.

c. CDR Calman Levich, Radiation Biology Department, discussed exposure of rats and monkeys to whole-body fission spectrum radiation in doses sufficient to cause death in time intervals associated with damage to the CNS. Half the animals were exposed to a reactor pulse having a width at half height of about 15ms. The average dose rate under the pulse was about 10^6 rads/sec. The other half of the animals were exposed at the rate of 1000 rads/minute. The survival time of pulsed animals was about half that of their steady state counterparts and the orderings of death time for the two cases were significantly different. This observation has significance to fundamental radiation biology as well as to military operations.

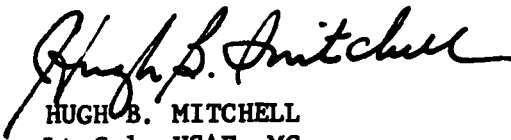
d. Dr. Sylvan Kaplan, Chairman, Behavioral Sciences Department, discussed the immediate casualty producing dose. Dr. Kaplan reported that his Department had developed thirteen independent case studies on the effects of 5000 rads of pulsed radiation upon certain behaviors and physiological parameters. A description of the initial onset of early transient incapacitation, its duration, time of recovery, and the survival times of the subjects were discussed. Examples of heart and brain changes following the exposure were demonstrated, as were the relative performance of the subjects pre and post radiation. Evidence was presented that indicates the duration of ETI seems to be greater than heretofore realized, depending upon the type of problem and other as yet undetermined factors. Further, it is apparent that the physiological changes noted do not appear to correlate with any behavior under consideration. The foregoing information pertained to the Macacuss Rhesus monkey.

5. Dr. N. F. Wikner presented a classified discussion of the DASA Biomedical Budget.

6. Colonel L. E. Browning discussed the manner in which the budget cuts have affected the AFRRI administrative problems. The following areas were discussed: personnel, (promotions and the career development program), space, travel, overtime, and capital equipment. These are the areas in which AFRRI has felt the greatest impact of the budget cuts.

7. Next Board of Governors Meeting. The Chairman and the members of the Board discussed the date for the next meeting and decided it should be between 11 and 25 May. A specific date will be firmed up later.

8. The Board adjourned at 1230 hours.


HUGH B. MITCHELL
Lt Col, USAF, MC
Chief, Medical Division, DASA